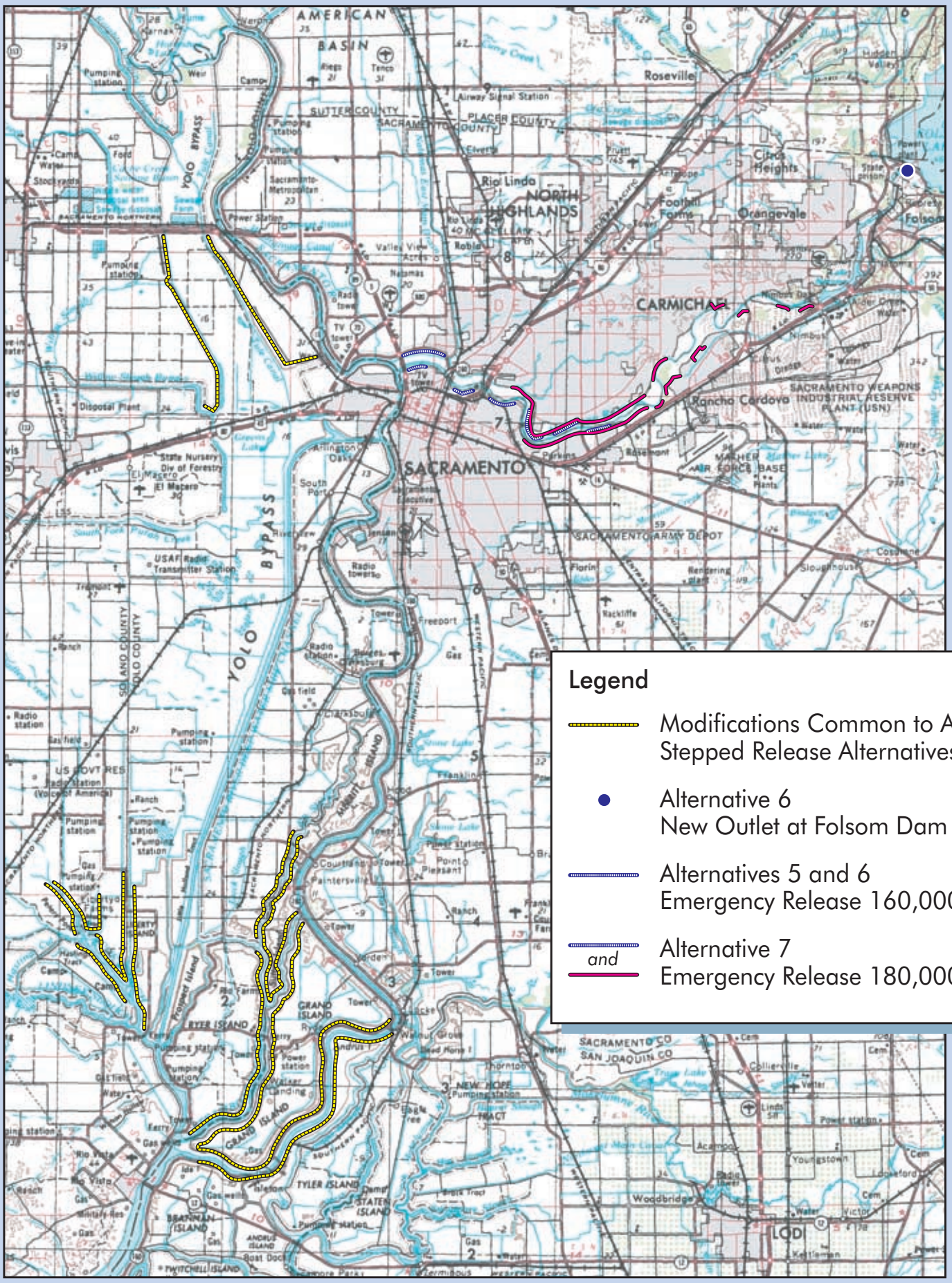
SAFCA

Sacramento Area Flood Control Agency

Project Description

Under the Stepped Release Plan, the capacity of the American River channel below Folsom Dam would be increased to accommodate higher flood control releases from the dam. This could entail raising the American River levees about 2 feet higher than their current elevation, modifying existing drainage and transportation infrastructure along the lower river, and raising portions of the levee system along the Sacramento River and the Sacramento and Yolo Bypasses.



U.S. Army Corps of Engineers

Stepped Release

Stepped Release Alternatives

The plan would be designed to preserve existing levels of service for infrastructure along the American River. It would also be designed to maintain the current flood protection capability of the levee system, protecting property outside the American River watershed, including property near the Sacramento and Yolo Bypasses.

Potential Impacts

The environmental impacts associated with the Stepped Release Plan were fully evaluated. These impacts would include:

Construction-Related Impacts

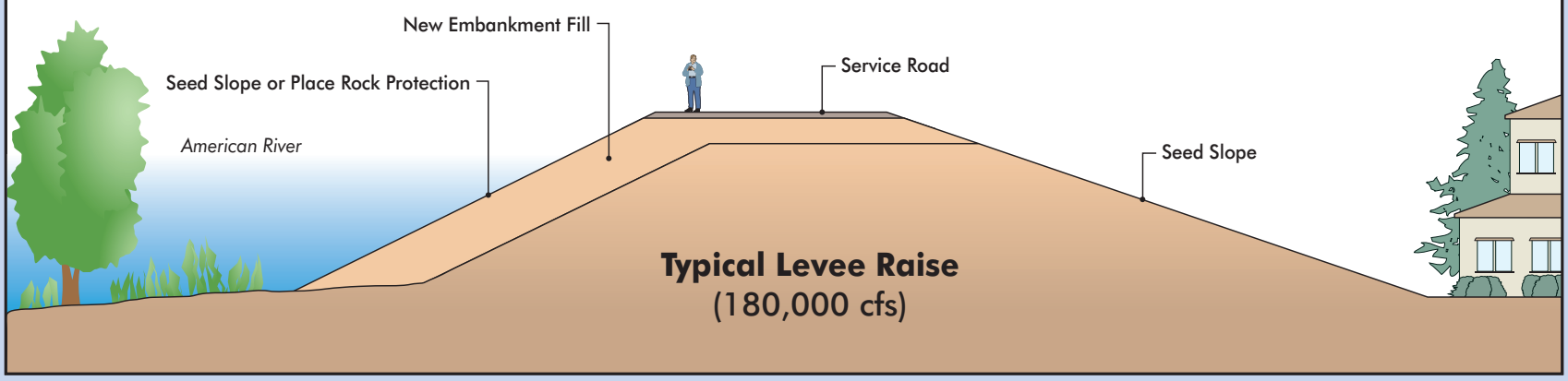
- Traffic/circulation
- Air quality
- Noise
- Vegetation
- Wildlife
- Fisheries

Operation-Related Impacts

- Levee integrity
- Interior drainage
- Fisheries
- Transportation

Alternative	Expected Annual Probability of Exceedance (1-in-x chance per year)	Total First Cost	Non-Federal Cost Share
5	172	$174.7 million	$174.7 million
6	185	$199.7 million	$199.7 million
7	196	$191.8 million	$191.8 million
8	222	$337.4 million	$220.5 million

Levee Raise Cross Section



State of California
The Reclamation Board

Features of Stepped Release Alternatives

Alternative 5: Stepped Release to 160,000 cfs

- Increase design flood control release from 115,000 cfs to 145,000 cfs with a step up to 160,000 cfs for large floods.
- Strengthen some existing levees along the Lower American River.
- Upgrade drains and pumps to preserve local drainage with the increased water surface on the Lower American River.
- Widen the Sacramento Weir and Bypass to direct additional flow into the Yolo Bypass. Move the north levee of the Sacramento Bypass to widen the bypass and lengthen the Sacramento Weir. This widening would allow increased flows from the American River to enter the Yolo Bypass.
- Strengthen levees in the Yolo Bypass, Sacramento River, and sloughs to avoid any increase in flood risk due to this project.

Annual Cost: $14 million Annual Benefit: $5.7 million Net Benefit: –$8.3 million

Alternative 6: Stepped Release to 160,000 cfs and New Outlet at Folsom Dam

- Add new outlets to increase the dam's low level outlet capacity from 115,000 cfs to 145,000 cfs.
- Above 145,000 cfs, the release would be stepped up to 160,000 cfs in the same manner as Alternative 5.

Annual Cost: $16 million Annual Benefit: $8.6 million Net Benefit: –$7.4 million

Alternative 7: Stepped Release to 180,000 cfs

- Increase design flood control release from 115,000 cfs to 145,000 cfs with a step up to 180,000 cfs for large floods.
- Implementation would involve the same work described under Alternative 5 plus extensive additional work along the Lower American River to accommodate the 180,000-cfs flow.
- Components included are:
  - raising and strengthening existing levees along the Lower American River,
  - constructing new levees and floodwalls along the Lower American River, and
  - modifying bridges along the Lower American River.

Annual Cost: $15.4 million Annual Benefit: $11.8 million Net Benefit: –$3.6 million

Alternative 8: Combination Plan

- This alternative combines all the features of Alternatives 3 and 5.

Annual Cost: $18.3 million Annual Benefit: $23.2 million Net Benefit: +$4.9 million

Conclusions

- Alternatives 5 through 7 have costs that are greater than benefits; thus none of these plans is economically justified.
- Because costs exceed benefits, there is no Federal interest in any of the stepped release plans.
- Alternative 8 combines Folsom enlargement with downstream levee modifications. The benefit-to-cost ratio of the Folsom enlargement increment is greater than 1. The benefit-to-cost ratio of the downstream levee increment is less than 1. Therefore, there is a Federal interest in the plan, but the non-Federal sponsor must pay 100% of the cost for the downstream levee improvements.